21. (Amended) The method of claim 39, wherein one of the primers consists of a sequence containing a cassette of 40 to 60 nucleotides and 10 to 20 T nucleotides, and the second primer is a random repeat of nucleotides.

22. (Amended) The method of claim 39, wherein said part of the genome adjacent to the target gene is a fusion partner.

23. (Amended) The method of claim 22, comprising:

a) subjecting the patient's genome DNA or RNA to the action of a compound capable of cleaving or specifically inhibiting the DNA or RNA of the target gene, the fusion of which is to be detected,

b) performing said PCR,

c) reacting the PCR products thus obtained with two probes specific for each target gene, one being upstream, and the other one being downstream, and with probes complementary to known fusion partners,

a positive detection on the upstream probe and a negative detection on the downstream probe, corresponding to a rearrangement of the target genes, and a negative detection for the known partner genes corresponding to the absence of fusion with a known fusion partner, or alternatively,

d) reacting the PCR products with a plurality of probes bonded to a miniaturized support, and detecting hybridization of the probes with the PCR products, if any.

25. (Amended) The method of claim 24, comprising

a) the RT synthesis of a cDNA pool from the patient's RNA, using primers consisting of a 5' cassette with 30 to 35 nucleotides with a 3' sequence of 6 or 9 random nucleotides,

b) a PCR amplification using a first primer located on the MLL exon 5, as specific sense primer, the 3' primer being the same on each cycle and complementary to the oligonucleotide cassette used in the RT step.

29. (Amended) The method of claim 39, wherein said pathology is leukemia.

30. (Amended) The method of claim 39, wherein said pathology concerns solid tumors.

32. (Amended) A kit for the detection and identification method according to claim 39, comprising reagents for carrying out the PCR and detection step, anchored primers, and primers specific for the target genes.

34. (Amended) A kit according to claim 32, further comprising probes complementary to the target genes and probes complementary to known fusion partners.

Add the following claims:

--39. (new) An *in vitro* diagnostic method for detecting and identifying DNA sequences involved in pathologies associated with rearrangements of a target gene, wherein a patient DNA or cDNA is subjected to an anchored PCR, *in vitro*, comprising :

a) amplifying the DNA or cDNA by one or more PCR, with at least one pair of primers, one of the primers being complementary to the nucleotide sequence of the

target gene, the other primer being a complementary anchored primer, wherein all the DNA sequences adjacent to the target gene are amplified,

b) obtaining PCR products,

c) hybridizing the PCR products with probes specific for either the target gene or any adjacent DNA sequences,

d) detecting the presence of rearrangements of the target gene, and, if any rearrangement is detected, identifying the DNA sequences involved.--

REMARKS

Reconsideration is requested.

Claim 16 has been canceled, without prejudice. Claim 39 has been added, based on canceled claim 16. No new matter has been added. The amendments do not raise new issues requiring further search and/or consideration. The amendments do not add new claims without canceling a corresponding number of claims. Upon entry of the above amendments, claims 17-39 will be pending. The specification has been amended as required by the Examiner at page 2, ¶ 2 of the Office Action dated September 25, 2001 (Paper No. 9). Entry of the above amendments is requested.

Claim 16 has been canceled, and claim 39 added, to clarify the claimed method and to better point out the originality of the claimed invention. Specifically, the preamble of new claim 39 provides for a method for detecting and identifying DNA sequences involved in rearrangements of a target gene and for the use of an anchored PCR. The